UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,488	08/01/2003	Geoffrey F. Cox	ST03004USU (172-US-U1)	5142

7590 05/05/2005

The Eclipse Group
10453 Raintree Lane
Northridge, CA 91326

EXAMINER	
MANCHO, RONNIE M	
ART UNIT	**PAPER NUMBER**
3663	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,488	COX ET AL.	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-31 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-31 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/7/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-32, 34 are rejected under 35 U.S.C. 102(b) as being anticipated by P. Ptasinski et al (Jounal of Navigation, 2002, chapter 55, pages 451-462).

Regarding claim 2, Ptasinski et al disclose the satellite positioning receiver (see GPS antenna, fig. 4) capable of receipt of at least three positioning signals (pages 453, 454) comprising:

a navigation processor (figs. 3&4) that processes the at least three positioning signals and determines an at least three code phases (pages 453-456); and

a location determined from initial digital terrain elevation data (pages 453-456) used to calculate a solution with the at least three code phases and an altitude equation derived from the initial digital terrain êlevation data, where the solution further includes:

a horizontal error ellipse parameter (fig. 1, pages 452, 453) in the altitude equation that form an ellipse having a major axis and a minor axis that correspond to the altitude error (figs. 1&2);

a plurality of points along the major axis and the minor axis that form a grid of grid points (figs. 1&2; pages 452, 453); and

a memory that contains digital terrain elevation data (altitude augmentation using digital maps, pages 454-456) the grid points.

Regarding claim 3, Ptasinski et al disclose the satellite positioning receiver of claim 2, including:

a server that receives a plurality of satellite code phases where each of the satellite code phases is associated with a satellite positioning system signal over a wireless network (ericson moble, fig. 4); and

a controller in the server accesses the initial digital terrain data in order to determine a solution (pages 455, 456)

Regarding claim 4, Ptasinski et al disclose the satellite positioning receiver of claim 2, where the initial digital terrain elevation data is retrieved from the memory in response to receipt of a signal other than the at least three positioning signals.

Regarding claim 5, Ptasinski et al disclose the satellite positioning receiver of claim 2, wherein the digital terrain elevation data in the memory is NIMA (DTED) level 0 digital mean elevation data.

Regarding claim 6, Ptasinski et al disclose the satellite positioning receiver of claim 2, where the digital terrain elevation data in the memory is GTOPO30 Global Elevation data.

Regarding claim 7, Ptasinski et al disclose the satellite positioning receiver of claim 2, wherein a maximum residual error in a polynomial surface fit over the grid points calculated by the navigation processor is below a predetermined threshold.

Regarding claim 8, Ptasinski et al disclose the satellite positioning receiver of claim 7, wherein, the predetermined threshold is 100 meters.

Regarding claim 9, Ptasinski et al disclose the receiver of claim 2, wherein the navigation processor is a processor located in a server.

Regarding claim 10, Ptasinski et al disclose a method of determining the location of a receiver (figs. 3&4) in recipient of at least three positioning signals, comprising:

identifying a reference location (pages 452-456) with the at least three positioning signals;

retrieving an initial height (pages 452, 453);

determining an average height along with an average height error (altitude error, pages 452, etc) from the initial height (pages 452-454);

deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

solving the at least three simultaneous equations (pages 452-456) with the average height and the average height error that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

solving the at least three simultaneous equations and the two dimension polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 11, Ptasinski et al disclose the method of claim 10, where determining an average height further includes:

identifying one of a minimum height and a maximum height; and setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height.

Regarding claim 12, Ptasinski et al disclose the method of claim 10, where retrieving an initial height further includes: transmitting a plurality of code phases to a server where each of the code phases is associated with each of the positioning signal; and accessing digital terrain data stored in a memory to retrieve the initial height.

Regarding claim 13, Ptasinski et al disclose the method of claim 12, wherein the wireless network is a cellular communication network.

Regarding claim 14, Ptasinski et al disclose the method of claim 10, where retrieving an initial height further includes: receiving the initial height from a memory located within the satellite positioning receiver.

Regarding claim 15, Ptasinski et al disclose the method of claim 10, further include: acquiring another height using variables from the two dimensional polynomial; and comparing the difference between the other height and altitude to a predetermined threshold.

Regarding claim 16, Ptasinski et al disclose the method of claim 15, where the predetermined threshold is 100 meters.

Regarding claim 17, Ptasinski et al disclose the method of claim 10, where the receiver is located in a server.

Regarding claim 18, Ptasinski et al disclose the satellite positioning receiver apparatus (figs. 3&4) in recipient of at least three positioning signals, comprising:

means for identifying a reference location with the at least three positioning signals (pages 452-456);

means for retrieving an initial height (pages 452-456);

means for determining an average height along with an average height error from the initial height; means for deriving at least three simultaneous equations associated with the at least three positioning signals(pages 452-456);

means for solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse(pages 452-456);

means for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse; and means for solving the at least three simultaneous equations and the two dimension polynomial that results in an altitude of the satellite positioning receiver(pages 452-456).

Regarding claim 19, Ptasinski et al disclose the apparatus of claim 18, wherein the determining an average height means further includes: means for identifying one of a minimum height and a maximum height; and means for setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height.

Regarding claim 20, Ptasinski et al disclose the apparatus of claim 18, wherein the means for retrieving an initial height further includes: means for receiving the initial height from a server located in a wireless network.

Regarding claim 21, Ptasinski et al disclose the apparatus of claim 20, wherein the wireless network is a cellular communication network.

Regarding claim 22, Ptasinski et al disclose the apparatus of claim 18, wherein the means for retrieving an initial height further includes: means for receiving the initial height from a memory located within the satellite positioning receiver.

Regarding claim 23, Ptasinski et al disclose the apparatus of claim 18, further include: means for acquiring another height using variables from the two dimensional polynomial; and means for comparing the difference between the other height and altitude to a predetermined threshold.

Regarding claim 24, Ptasinski et al disclose the apparatus of claim 23, where the predetermined threshold is 100 meters.

Regarding claim 25, Ptasinski et al disclose a machine-readable signal bearing medium (figs. 3&4) for satellite positioning receiver apparatus containing a plurality of machine-readable signals, comprising:

means (figs. 3&4) for identifying a reference location upon receipt of at least three positioning signals (pages 452-456);

means (figs. 3&4) for retrieving an initial height (altitude, pages 452-456);

means (fig. 2) for determining an average height along with an average height error from the initial height (pages 452-456);

means (figs. 3&4) for deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

means (figs. 3&4) for solving the at least three simultaneous equations with the average height and the average height error that results in a position and a corresponding horizontal error ellipse (pages 452-456);

means (figs. 3&4) for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (pages 452-456); and

means (figs. 3&4) for solving the at least three simultaneous equations and the two dimension polynomial that results in an altitude of the satellite positioning receiver (pages 452-456).

Regarding claim 26, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, wherein the determining an average height means further includes:

means for identifying one of a minimum height and a maximum height (pages 452-456); and

means for setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height (pages 452-456).

Regarding claim 27, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, wherein the means for retrieving an initial height further includes: means for receiving the initial height from a server located in a wireless network.

Regarding claim 28, Ptasinski et al disclose the machine-readable signal bearing medium of claim 27, wherein the wireless network is a cellular communication network.

Regarding claim 29, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, wherein the means for retrieving an initial height further includes:

means for receiving the initial height from a memory.

Regarding claim 30, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, further include:

means for acquiring another height using variables from the two dimensional polynomial; and

means for comparing the difference between the other height and altitude to a predetermined threshold.

Regarding claim 31, Ptasinski et al disclose the machine-readable signal bearing medium of claim 30, where the predetermined threshold is 100 meters.

Regarding claim 34, Ptasinski et al disclose a server (fig. 4), comprising:

a transceiver (figs. 3&4) that receives a plurality of satellite code phases (pages 454-457);

a memory (figs. 3&4) with digital terrain elevation data (pages 454-457); and

a controller (figs. 3&4) that processes the plurality of code phases and accesses the digital terrain data in memory with an initial height to determine a location indicated by the plurality of satellite codes and the digital terrain data (pages 454-457);

a message containing the location data sent from the transceiver;

a horizontal error ellipse parameter (figs. 1&2) in an altitude equation that form an error ellipse having a major axis and a minor axis that corresponds to an altitude error about the initial height (pages 452-456); and

a plurality of points along the major axis and the minor axis that form a grid of grid points that the controller accesses the digital terrain elevation data in memory at the grid points (pages 452-457).

Communication

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

April 26, 2005.

THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
GROUP 3600